

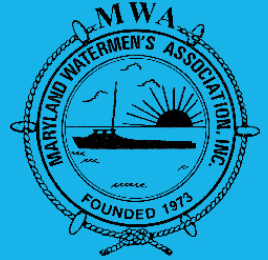
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Waterman's Gazette

Vol. 31, No. 7 July 2004



Watermen at Work for the Bay: forging partnerships to protect aquatic habitats and the fisheries that need them...p. 3



Planting SAV: William (Billy) Reed Evans waits for sacks of eelgrass from Kevin Marshall above. Below, Billy (on left) and Kevin Marshall unload sacks of the potential seed at Piney Point

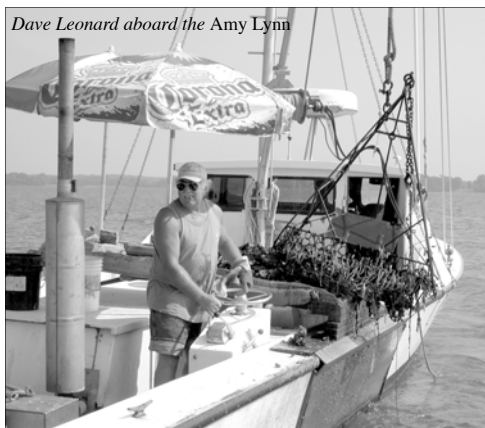


Newest brood at the COMB hatchery: Some of the 35,000 recently-hatched juvenile crabs await release. Soon larvae will be produced at the new Piney Point grow-out facility. Below, DNR's Heather Lynch shows how small the young crabs are when they are nearly ready for Bay waters



Cleaning the Bay a bar at a time: Captains Ricky Gowe (above) and Dave Leonard (below) dredge diseased oyster bars to lift and clean buried shell and remove diseased oysters downstream so the sites can be replanted





Watermen at work for the Bay

story and photos by Mary Madison (unless noted)

Over the decades, watermen have partnered with scientists and regulators on various efforts to enhance our Bay resources. These projects include: testing oyster aquaculture methods, setting up a rockfish hatchery and investigating which cull panels best release undersize finfish. Waterman "know how" coupled with scientific expertise is sorely needed as we face continued threats from polluted runoff, spills and disease.

Rising admirably to the task, Maryland's watermen have in recent years joined forces with scientists, managers and private industry to promote cutting-edge projects to battle oyster disease, loss of aquatic grasses and our diminished crab population.

In this issue, we'll take a look at three such efforts. While all have been implemented for several years, results are still pending as to how these partnerships will fare against the challenges we face. Still, the process of working together is itself a prize that no matter what, makes everyone a winner. So we are excited to update our readers and remind all that there is much more to fishing than just fishing!

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There's an old saying: "If you're not part of the solution, you're part of the problem." I have another favorite: "If you're not at the table, you're ON the table." When you put them together, it becomes clear that involvement is the only way to get things done – and that is what Maryland watermen are demonstrating every day. So join us for a closer look at Maryland watermen on the frontline in the battle for the Bay.



L-R: Dave Goshorn, Mike Naylor and Billy Reed Evans pull grass bags close for loading (Photo courtesy of DNR)

I. Seeding our aquatic lawn: SAV restoration

When asked about his work with the Maryland Department of Natural Resources' SAV project, Smith Island waterman Kevin Marshall is matter of fact: "I think it's a good idea as long as it works."

Kevin is one of 8 watermen helping DNR "mow" eelgrass from the Lower Bay to gather seed that is planted on plots in the Potomac and the Patuxent Rivers. Kevin has ferried nearly a thousand soggy 80-lb mesh bags of shorn grass tips up to DNR's Piney Point facility near the mouth of the Potomac River for processing.

Some of these bags are repacked into smaller 4-ft. by 6-in. float-tethered bags for immediate planting (see photo on right). Western Shore watermen help transport the bags for "planting" at target sites where they will linger above the bottom until the grass releases its seeds and they fall naturally to the underlying earth. These seeds need only cooler temperatures to signal their germination and hopefully, their maturity into underwater habitat.

Grass tips not planted immediately are stored in 20,000 gallon aerated tanks at Piney Point until they also drop their seeds in July. Researchers will then "winnow" out the precious cargo from the decaying leaves and sow these seeds into the water using one of three broadcasting methods this fall. Researchers will monitor all the sites to see which method (including the float-bags) proves to be the most cost-effective way to grow grasses.

The sowing processes were originally developed at Cornell University and the boat used for "mowing" is typically found clearing marinas and channels of unwanted vegetation such as hydrilla. The sites for planting were chosen based on models of existing water quality and historic locations for underwater grasses. All the plots were tested for 2 years with sample plantings before DNR went full-force into their effort.

The clipping of the tops of eelgrass is similar to how a crab scrape works. Just like a scrape, the DNR vessel shaves off the top, seed bearing portion, of the grass, leaving the root unharmed in the bottom. (The mower actually uses scissor-like blades, while a crab scrape is literally a bar with an attached net that is pulled over the bottom) Both methods take off the tops of underwater grasses. Watermen in the Lower Bay have for years explained that crab scraping not

Some of DNR's SAV team, L-R: Dave Goshorn, Lee Karrh, Mke Naylor (back) and Mark Lewandowski



(Photo courtesy of DNR)

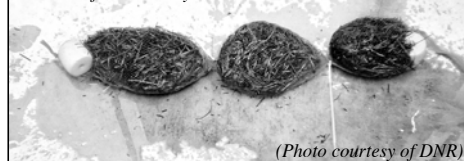
only doesn't hurt the grass, but actually cultivates it. They consider this crabbing technique to be an enhancement of the underwater habitat, and note that historic scrape areas have weathered the test of time by remaining healthy and abundant.

Local fishermen, Kevin told me, were at first leery of the DNR project because they feared the "mower" might be damaging their vital bottom. Kevin told his fellow watermen that he handled every one of the 900 bags and "never saw one root" in the mix. So he feels satisfied that the DNR is trimming, but not tearing out, the young seed.

DNR's Resource Assessment Service Director Dave Goshorn, who heads the project, notes this new approach is not the full solution, but rather plays a supporting role toward solving the larger problem. He emphasized that true restoration depends on reducing polluted runoff.

"People think we're going to plant our way back [to historic grass levels]. That's not the case. People get excited about a new methodology and think it's the answer. It's not. We need to improve water quality – that's what these grasses depend on."

Repacked sacks of grass tips are anchored to sites so their seed will fall naturally to the bottom



(Photo courtesy of DNR)

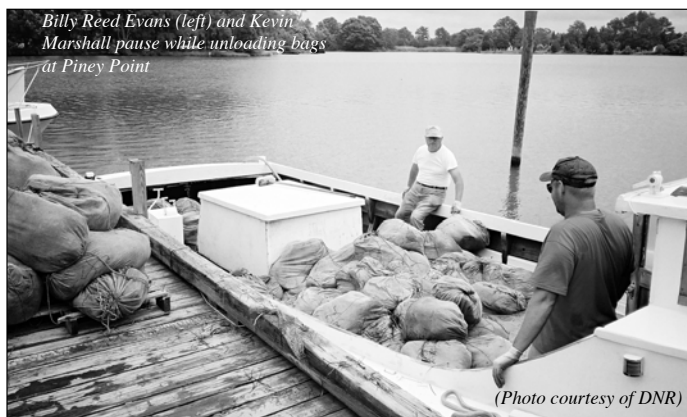
He noted the recent data showing a 30% decline in Bay grasses in the last year; Maryland's losses were calculated at 41%. This drop is due primarily to polluted runoff that washed into the Bay with last year's abundant spring rains. The losses are contrasted by an improvement in the several prior years when drought conditions kept runoff from getting into Bay waters.

"It does make the point that water quality is the most important thing for these grasses," Dave noted. [can we say this enough? I don't think so!]

Dave said the watermen have been "very helpful and flexible" in working with him on this project, especially since much of this is still new technology, with DNR "making it up as they go" in certain circumstances.

Dave said the watermen are not just doing the work, but they are coming up with suggestions to improve the process. (continued on page 26)

Correction: in last month's *Gazette*, we mistakenly noted that the Planning Director for Talbot County was George McKinney. In fact, his name is George Kinney. We regret the error and appreciated the cooperation of both Talbot County Planning Commissioner Peter Carroll and Planning Director George Kinney in the preparation of our story. -Ed.

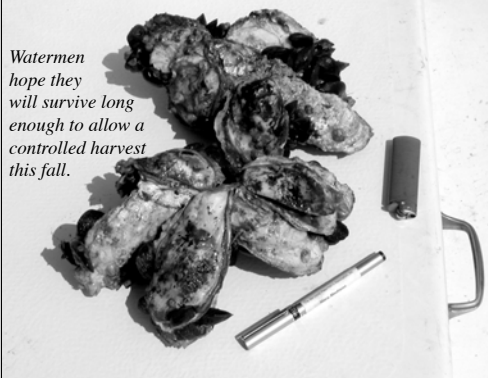


now free of silt and lifted above the mud, is an excellent substrate for disease-resistant hatchery seed (young oysters) which will be planted here after the bar is fully prepared. Some of these areas are cleaned and planted as sanctuaries and some are planted as managed reserves.

The reserves are a new tool in Bay oyster management – they combine the ecological benefit of planting oysters while benefiting the fishery by letting watermen harvest them before they succumb to disease. It could be a win-win effort for the Bay and oysterermen, but it all depends on Mother Nature's cooperation and

Reserve oysters from the mouth of the Chester River.

Watermen hope they will survive long enough to allow a controlled harvest this fall.



[cont'd from page 3]

When Kevin started with the project, DNR staff was lifting 150 soggy 32-gallon bags of grass every day from a storage site in the Bay onto Kevin's boat for transport. Kevin quickly enlisted the aid of fellow waterman William Evans, who provided a winch to do the heavy lifting.

"Every day the watermen did different things to make the job easier," Dave noted.

DNR is not pioneering this project with just watermen; the Virginia Institute of Marine Science is an essential partner and will also be conducting plantings in VA waters. DNR hopes to have 1,000 acres planted by 2008.

So while we watch and learn from this collaborative effort, let us not forget that we still must wrestle with improving storm water management, upgrade our sewage treatment plants (thank-you Gov. Ehrlich and our Legislature for the passing the flush tax!), and lower our tolerance for spills of untreated waste and toxic into Bay waters.

the resilience of the seed.

The reserves will remain closed to harvesting until at least half of the oysters are 4 inches or longer in size. Then the reserves will be opened periodically for special Saturday harvests, when the oversized oysters can be sold at a premium price.

The reserve sites (near Chester River, the Choptank River and a small area in the Patuxent) are carefully chosen in midrange salinities on bars that will provide an optimum opportunity for growth without encouraging disease. Higher salinity encourages better oyster reproduction, but it also encourages the parasitic diseases plaguing our native species. The reserves reflect a delicate balance between hydrology and the parasitic threats which have all but wiped out our Chesapeake oyster stocks.

The reserves are one part of a larger effort to manage around disease. The live, diseased oysters are harvested and moved downstream from the site to give the upstream planting an extra chance. It is theorized that parasites only stay with live oysters, so scientists and watermen hope that moving diseased oysters bayward and planting disease-free hatchery seed inland from the cleaned sites will help the planted sites survive longer.

The idea of clearing upstream areas of diseased oysters and replanting with disease-free seed has been a long-term goal of the Oyster Roundtable, a consortium of scientists, regulators and industry seeking to enhance native populations. Now increased hatchery production has meant the strategy can be implemented. It is one of several efforts to manage around disease, because we still do not have a native species that can withstand the parasitic invasion; hatchery seed merely buys us extra time.

Managed reserves are a fairly new twist in overall oyster management strategy. Developed in collaboration through the Maryland Watermen's Association (MWA), the Oyster Recovery Partnership (ORP) (which implements the goals of the Oyster Roundtable), the University of Maryland

and Maryland's Department of Natural Resources, reserves are an experiment inside an experiment – a subsection of the "move disease downstream" hypothesis.

The oldest reserve sites (2 near the Chester River and one in the Choptank) are in their 3rd year, and oysters at these locations are surviving and growing. Scientists and watermen hope to open the areas for a controlled harvest this coming fall. The special harvest will be a welcome, though temporary, relief, especially after last winter's yield plummeted to a record low of 20,000 bushels – less than half of the historic all-time low of the 2002-2003 season.

The number of watermen entering the oyster fishery mirrors the landings. Only 200 watermen paid the surcharge which allowed them to oyster last winter. This reflects an over 90% drop from the 2,500 who were on the water only 5 years ago. Watermen are desperately hoping the reserve experiment pays off.



Capt. Ricky Gowe bar cleaning in the Choptank

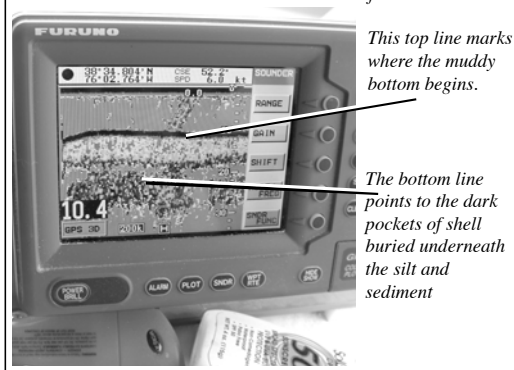
II. Oyster bar cleaning: Giving disease the "heave ho" and testing managed reserves

Captain Dave Leonard deftly swings the loaded dredge over his stainless steel culling board. With a flick of the hydraulic valve, the dredge's jaws gape and out pours buried treasure – oyster shells enshrined in mussels. The pile splays across the board and Dave begins sorting out the few live oysters from the pile of shell.

This is not oyster season, and these oysters (the live ones he can locate) are not going to market. At least not yet.

Dave runs one of a dozen boats that are spending off-season days dredging deep into targeted oyster beds to furrow out all survivors while returning the newly-cleaned and exposed shell to rest atop soft bottom. The cleaned shell,

The sonar shows shells buried under the soft bottom.



This top line marks where the muddy bottom begins.

The bottom line points to the dark pockets of shell buried underneath the silt and sediment



All too familiar: this is "box" or dead oyster that is the more frequent catch of watermen these days. See the opened shell that is left when the animal perishes

"We won't know it's successful until we catch some [oysters from reserves] and sell them," observes MWA president and waterman Larry Simms. He has been one of the guiding forces behind the idea of reserves, and he's working on additional modifications to make bar cleaning management strategies more cost effective.

He'd like to have dredgers start bar cleaning the last month of the oyster season instead of waiting until the summertime. This would save ORP money (they are paying for the cleaning utilizing a blend of state and federal funds) and it would allow watermen to sell the live oysters as they are removed. Right now, the oysters are collected and shifted to higher concentrations on hand tonging areas or reserved as hatchery broodstock. This strategy would "spread the wealth" of the cleaning and also infuse the market during the season. The unfinished portions would be cleaned during the summer, just as they are now.

"It would save the program money so we can do more with the funds," Larry calculates. "We're trying to do this like a business – to utilize our time wisely and cost effectively." Larry adds that bar cleaning and reserves are "not the savior" of the oyster industry, but are simply some of the tools that could make a small difference for the larger long-term picture.

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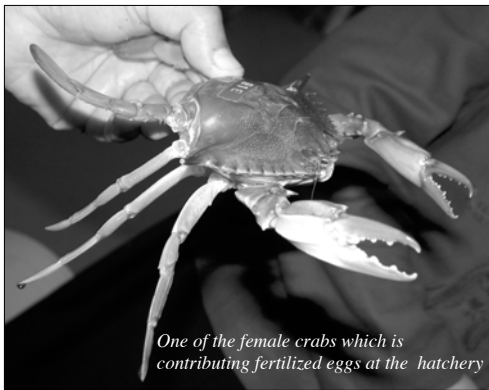
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But, as he notes, the jury is still out. A controlled, periodic harvest of the reserves should occur this coming winter, he thinks. "As long as Mother Nature is good to us and doesn't kill the oysters," he cautions, "we have a chance."

Dave Leonard and his son Brian guide the *Amy Lynn* to one of the reserve sites near the mouth of the Chester River. Dave does a short "lick" with the dredge and shows me the now-mature hatchery seed, nearly three years old. The oysters are clumping beautifully and most importantly, are still alive. Dave has participated in the bar cleaning for several years now. He said he thinks this method makes sense and he's "behind it 100%."

"I think maybe we got some kind of chance," he explains. This is optimistic talk for a fishery that has all but disappeared. "If I didn't really think so, I wouldn't be doing it." But Dave adds that reserves and plantings are not going to be an overnight success. "You go from almost nothing – it's gonna take some time."

We look forward to harvest news this fall and we will then take another look at this collaborative effort, which depends not only on the partnership of people, but also the blessings of the natural world.



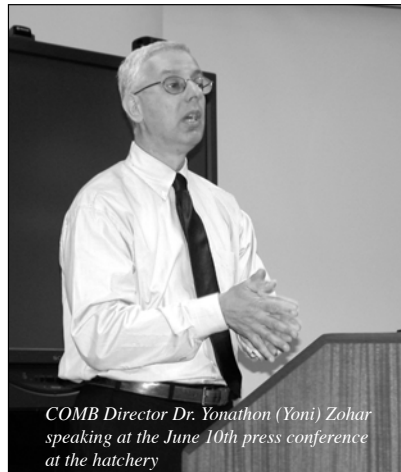
One of the female crabs which is contributing fertilized eggs at the hatchery

III. Hatching new ideas for the Bay: the COMB hatchery

For several years, the *Waterman's Gazette* has been following the progress of the crab hatchery at the University of Maryland's Center of Marine Biotechnology in Baltimore's Inner Harbor. We were covering their amazing progress in spawning and rearing juvenile crabs while other scientists scoffed at the possibility. The hatchery effort was initially sponsored through support from Phillips Seafood, the Maryland Watermen's Association and an initial grant from Maryland's Department of Business and Economic Development.

COMB's Director, Dr. Yonathon (Yoni) Zohar recalls that other scientists were sure his effort would fail. "They said we couldn't do it; that the crab's lifecycle was too complicated." Yoni smiles and adds, "We said, *Let us try.*"

And try they did. Yoni and his team of scientists and graduate students demonstrated they could not only reach unprecedented survival rates in larvae, but also created a closed life cycle where hatchery-reared crabs spawned their own progeny in the lab – a research first! Now COMB has helped form the Blue Crab Research Consortium, or CRAB – a team of researchers (Smithsonian Environmental Research Center (SERC), VA Institute of Marine Science, Univ. of Southern Mississippi, North Carolina State, DNR and MWA) who are continuing to delve into blue crab biology and who are developing genetic markers for blue crabs so that hatchery offspring



COMB Director Dr. Yonathon (Yoni) Zohar speaking at the June 10th press conference at the hatchery

can be monitored without the tedious task of injecting the tiny crabs with individual and often temporary markers. (*Waterman's Gazette* wrote an in-depth review of the Consortium's research in the May, 2004 issue) All this has occurred as COMB researchers deepen our knowledge of basic blue crab biology and develop hatchery techniques that will help ensure the greatest survival at grow out facilities around the Bay.

COMB has been guided and supported in these efforts by the MWA's nonprofit arm, the Chesapeake Bay Environmental Planners (CBEP), as well as funding garnered through Senator Mikulski and also a recent infusion of capital (\$100,000) from the Phillips family.

What has proven to be equally successful throughout this process is the continuing partnership between COMB's researchers and individual Maryland watermen. The initial research for the hatchery was coordinated with MWA's CBEP, and the females that the hatchery used were supplied by local fishermen, including many from Capt. Bob Evans of Shadyside, MD.

"I was skeptical when it first started," Bob confided. "But then they [Dr. Zohar and staff] invited me to the lab to see the crabs they had spawned from the females I had brought. They had 30,000 hatched crabs [from the first spawning], and they were getting several more spawns from the same female. I thought, *this thing is far beyond anything we had imagined.*"

Evans, now Executive Chair of the CBEP, is especially appreciative that Zohar is always accessible to watermen, and open to their suggestions, experiences and knowledge. "The beautiful part about working with the hatchery," Bob explains, "is that we have scientists who are excited about their work and who are interested in working with watermen. Yoni talks in laymen's terms about what he's doing and they invite me up here to be a part of the process. I think that what we are doing here will go down in the history books."



Capt. Bob Evans being interviewed by Channel 11 at the hatchery

Indeed, the 41,000 tagged and monitored juveniles released last year is, according to Yoni, the largest monitored release of a crustacean ever performed to date. The research team at SERC were the able hands tagging and monitoring the release. Their findings have been crucial in determining how to best handle hatchery crabs during their move to open waters.

The limiting factor in production has been space to raise the crabs. Now COMB, CBEP and Phillips Seafood have partnered with DNR to open the first grow out facility at DNR's Piney Point hatchery near the mouth of the Potomac. Phillips will help staff the new release site with two scientists from Indonesia who have already worked with a relative of our native blue crab – the Indonesian swimming crab.



One of the 35,000 juvenile crabs in the first "batch" of crab babies this year. It is nearly large enough to be tagged and released.



Joanna Phillips and Larry Simms at the hatchery

Already, the COMB lab has 35,000 young crabs waiting for the open water, and this is just the first batch of 2004!

"Watermen have always given us their unconditional support and years of experience," Zohar told the audience when Joanna Phillips presented him with the check for \$100,000. What began 3 years ago as an earnest experiment could pay big dividends for the Bay. Zohar said he sees their work as having a "major impact on the future health and well being of the blue crab fishery."

Capt. Evans also likes the project because it shows the power of collaboration against the odds. "It's exciting to me," he grinned, "because everybody said they couldn't do it."

Well, they did. And they are – right alongside our Bay watermen and in partnership with resource managers and industry. So if you find yourself at the cutting edge these days, you might want to look around and see who is there with you. If might just be a guy with white boots and a boat.

[More information on the recent Phillips donation, along with a letter from Senator Barbara Mikulski, is available in the CBEP column on page 5]